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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/068,492	02/05/2002	Michael J. Tsecouras	TI-33116	7292

23494 7590 12/13/2006

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EXAMINER	
BHATTACHARYA, SAM	
ART UNIT	PAPER NUMBER
2617	

DATE MAILED: 12/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/068,492	Applicant(s) TSECOURAS, MICHAEL J.
	Examiner Sam Bhattacharya	Art Unit 2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. In view of the Appeal Brief filed on 9/25/06, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

George Eng

GEORGE ENG
SUPERVISORY PATENT EXAMINER

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-5, 11-15, 18-21, 24-25, and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schubert et al. (US 2001/0033628) in view of Orndorff (US 5,640,697) and Groshong et al. (US 5,301,366).

As to claim 1, Figures 17 and 31 in Schubert shows a digital amplifier adaptive pulse frame rate frequency control system comprising:

a sample rate converter 600;

a programmable controller 620 operational to generate control data bits (see paragraph 43, lines 1-5 and claim 1); and

a system clock generator 1070 operational to generate a sample rate converter master clock signal in response to the control data bits such that the sample rate converter generates output data at a sample rate determined by the control data bits (see paragraph 46, lines 1-3 and paragraph 50, lines 1-16).

However, the Schubert reference does not disclose a programmable controller operational in response to input frequency data to generate control data bits. The Orndorff reference teaches a programmable controller operational in response to input frequency data to generate control data bits (see Figure 3, Col. 3, lines 9-15, Col. 5, lines 9-28, Col. 8, lines 12-16, and Col. 11, line 59 to Col. 12 line 8).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Schubert to comprise a programmable controller operational in response to input frequency data to generate control data bits, as taught by Orndorff, in order to program the controller to respond to inputs for tuning.

The combination of Schubert and Orndorff fails to disclose that the input frequency data to control to which the programmable controller is operational is user selected. However, in an analogous art, Groshong et al. disclose that the input frequency data to control to which the programmable controller is operational is user selected. See FIG. 2 and col. 4, lines 28-40.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Schubert and Orndorff by incorporating the features taught in Groshong et al. for the purpose of using the system in an existing AM or FM radio device.

As to claims 2, 13, and 19, Schubert-Orndorff-Groshong discloses the digital amplifier adaptive pulse frame rate frequency control system according to claims 1, 12, and 18 wherein the programmable controller comprises a data processing device selected from the group consisting of a computer, a digital signal processor, a CPU, and a micro-controller (Schubert shows the programmable controller as DSP 620 in FIG. 17).

As to claims 3, 14, and 20, Schubert-Orndorff-Groshong discloses the digital amplifier adaptive pulse frame rate frequency control system according to claims 1, 12, and 18 wherein the system clock generator comprises a frequency controller selected from the group consisting of a digital frequency synthesizer, and a programmable phase-locked loop (FIG. 17 in Schubert shows a programmable phase-locked loop, See paragraph 72, lines 1-4).

As to claims 4, 15, and 21, Schubert-Orndorff-Groshong discloses the digital amplifier adaptive pulse frame rate frequency control system according to claims 1, 12, and 18 wherein the system clock generator is further operational to generate audio clock signals at the sample rate determined by the control data bits (Schubert: see paragraph 178, lines 1-21. If the received signal is audio clock signal, then the system clock generator generates audio clock signals at the determined sample rate).

As to claims 5 and 24, Schubert-Orndorff-Groshong discloses the digital amplifier adaptive pulse frame rate frequency control system according to claims 4 and 18 wherein the

system clock generator is further operational to generate sample clock signals at the sample rate determined by the control data bits (Schubert: see paragraph 46, lines 1-3 and paragraph 50, lines 1-16).

As to claim 11, Schubert-Orndorff-Groshong discloses the digital amplifier adaptive pulse frame rate frequency control system according to claim 1 wherein the sample rate converter comprises a digital asynchronous sample rate converter (Schuber: see paragraph 151, lines 1-24).

As to claim 12, Figures 17 and 31 in Schubert shows a digital amplifier adaptive pulse frame rate frequency control system comprising:

a digital asynchronous sample rate converter 600 operational to generate output audio data in response to input audio data, an input audio clock and a master clock;

a programmable controller 620 operational to generate control data bits (see paragraph 46, lines 1-3 and paragraph 50, lines 1-6;

a decoder 862 operational to decode the control data bits (see paragraph 173, lines 1-36); and

a system clock generator 1070 operational to generate the master clock in response to the decoded control data bits such that the digital asynchronous sample rate converter generates the output data at a sample rate determined by the user selected input frequency information (see see paragraph 46, lines 1-3 and paragraph 50, lines 1-16).

However, the Schubert reference does not disclose a programmable controller operational in response to user selected input frequency information to generate control data bits, wherein the input frequency information is selected from the group consisting of wireless, cellular

telephone, Bluetooth, RF, IF, LCO, AM, FM, and TV band frequencies. The Orndorff reference teaches a programmable controller operational in response to user selected input frequency information to generate control data bits, wherein the input frequency information is selected from the group consisting of wireless, cellular telephone, Bluetooth, RF, IF, LCO, AM, FM, and TV band frequencies (see Figure 3, Col. 1, lines 13-20, Col. 3, lines 9-15 and 23-30, Col. 4, lines 37-42, Col. 5, lines 9-28, Col. 5, line 44 to Col. 8, line 20, and Col. 11, line 59 to Col. 12 line 8).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Schubert to comprise a programmable controller operational in response to user selected input frequency information to generate control data bits, wherein the input frequency information is selected from the group consisting of wireless, cellular telephone, Bluetooth, RF, IF, LCO, AM, FM, and TV band frequencies, as taught by Orndorff, in order to program the controller to respond to inputs for tuning.

The combination of Schubert and Orndorff fails to disclose that the input frequency data to control to which the programmable controller is operational is user selected. However, in an analogous art, Groshong et al. disclose that the input frequency data to control to which the programmable controller is operational is user selected. See FIG. 2 and col. 4, lines 28-40. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Schubert and Orndorff by incorporating the features taught in Groshong et al. for the purpose of using the system in an existing AM or FM radio device.

As to claim 18, what is cited in claim 12 is applicable to this claim 18. Claim 18 is the same as claim 12, except "means" is used in placed of an element (e.g., programmable controlling means in claim 18 versus a programmable controller in claim 12).

As to claim 25, Figure 7 in Schubert shows a method of controlling the pulse-frame rates for a digital amplifier output signal comprising the steps of:

providing a pulse-frame rate frequency control system having a programmable controller 620, a system clock generator 1070, and a digital asynchronous sample rate converter 600 operational to generate output audio data at a first sample rate in response to input audio data and further in response to input audio clocks (see paragraphs 43, lines 1-5);

communicating the control data bits to the system clock such that the system clock generates a master clock for the digital asynchronous sample rate converter at a new sample rate and further such that the system clock generates output audio clocks at the new sample rate (see and paragraph 50, lines 1-16); and

adapting the digital asynchronous sample rate converter output audio data at a first sample rate to conform to the new sample rate determined by the master clock (see paragraph 50, lines 1-16).

However, it does not disclose communicating user selected input frequency data to the controller such that the controller generates control data bits determined by the user selected input frequency data. The Orndorff reference teaches communicating user selected input frequency data to the controller such that the controller generates control data bits determined by the user selected input frequency data (see Figure 3, Col. 3, lines 9-15, Col. 5, lines 9-28, Col. 8, lines 12-16, and Col. 11, line 59 to Col. 12 line 8).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Schubert to comprise the step of communicating user selected input frequency data to the controller such that the controller generates control data bits determined by the user selected input frequency data, as taught by Orndorff, in order to program the controller to respond to inputs for tuning.

The combination of Schubert and Orndorff fails to disclose that the input frequency data to control to which the programmable controller is operational is user selected. However, in an analogous art, Groshong et al. disclose that the input frequency data to control to which the programmable controller is operational is user selected. See FIG. 2 and col. 4, lines 28-40. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Schubert and Orndorff by incorporating the features taught in Groshong et al. for the purpose of using the system in an existing AM or FM radio device.

As to claim 28, Schubert-Orndorff-Groshong discloses the method of claim 25 wherein the step of communicating user selected input frequency data to the controller such that the controller generates control data bits determined by the user selected input frequency data comprises the step of providing a look-up table of pulse-frame frequencies (output digital asynchronous sample rate converter clock generator frequencies) versus station data selected from the group consisting of RF, IF, LCO, AM, FM, TV station, wireless, cellular telephone and Bluetooth frequencies, that can be accessed by the controller to determine the control data bits (Orndorff: see Figure 3, Col. 1, lines 13-20, Col. 3, lines 9-15 and 23-30, Col. 4, lines 37-42, Col. 5, lines 9-28, Col. 5, line 44 to Col. 8, line 20, and Col. 11, line 59 to Col. 12 line 8).

As to claim 29, Schubert-Orndorff-Groshong discloses the method of claim 25 wherein the step of communicating user selected input frequency data to the controller such that the controller generates control data bits determined by the user selected input frequency data comprises the step of providing an algorithm to select pulse-frame frequencies (output digital asynchronous sample rate converter clock generator frequencies) versus station data selected from the group consisting of RF, IF, LCO, AM, FM, TV station, wireless, cellular telephone and Bluetooth frequencies, that can be accessed by the controller to determine the control data bits (Orndorff: see Figure 3, Col. 1, lines 13-20, Col. 3, lines 9-15 and 23-30, Col. 4, lines 37-42, Col. 5, lines 9-28, Col. 5, line 44 to Col. 8, line 20, and Col. 11, line 59 to Col. 12 line 8).

4. Claims 6-10, 16-17, 22-23, and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schubert et al. in view of Orndorff, and further in view of Groshong et al. and Midya et al. (U.S. Patent Application Publication 2002/0180518 A1).

As to claims 6, 16, and 22, Schubert-Orndorff-Groshong discloses the digital amplifier adaptive pulse frame rate frequency control system according to claims 4, 15, and 21. However, it does not disclose a digital amplifier responsive to the system clock generator audio clock signals and the sample rate converter output data such that the digital amplifier output switches at a pulse-frame rate determined by the system clock generator audio clock signals and the sample rate converter output data. The Midya reference teaches a digital amplifier responsive to the system clock generator audio clock signals and the sample rate converter output data such that the digital amplifier output switches at a pulse-frame rate determined by the system clock

generator audio clock signals and the sample rate converter output data (see Figure 1 and page 1, col. 2, paragraphs [0010] – [0011]).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Schubert-Orndorff-Groshong to further comprise a digital amplifier responsive to the system clock generator audio clock signals and the sample rate converter output data such that the digital amplifier output switches at a pulse-frame rate determined by the system clock generator audio clock signals and the sample rate converter output data, as taught by Midya, in order to provide error correction in digital amplifiers.

As to claims 7, 17, and 23, Schubert-Orndorff-Groshong-Midya discloses the digital amplifier adaptive pulse frame rate frequency control system according to claims 6, 16, and 22 wherein the digital amplifier output further switches at a pulse-frame rate to minimize interference associated with keep-out bands for frequencies related to a desired source (Midya: see page 2, col. 1, paragraph [0012]).

As to claim 8, Schubert-Orndorff-Groshong-Midya discloses the digital amplifier adaptive pulse frame rate frequency control system according to claim 7 wherein the keep-out bands are associated with frequencies selected from the group consisting of AM, FM and TV band frequencies (Orndorff: see Col. 1, lines 13-15, Col. 3, lines 23-30 and Col. 4, lines 37-42).

As to claim 9, Schubert-Orndorff-Groshong-Midya discloses the digital amplifier adaptive pulse frame rate frequency control system according to claim 7 wherein the keep-out bands are associated with frequencies selected from the group consisting of radio frequency (RF), intermediate frequency (IF), and Local Control Oscillator (LCO) frequencies (Orndorff: see Col. 5, line 44 to Col. 8, line 20).

As to claim 10, Schubert-Orndorff-Groshong-Midya discloses the digital amplifier adaptive pulse frame rate frequency control system according to claim 7 wherein the keep-out bands are associated with wireless communication frequencies selected from the group consisting of cellular telephone frequencies and Bluetooth frequencies (Schubert: see Col. 1, lines 7-10 and Col. 5, lines 42-45. Orndorff: see Col. 1, lines 13-20 and Col. 13, line 28 to Col. 14, line 4).

As to claim 26, Schubert-Orndorff-Groshong discloses the method according to claim 25. However, it does not disclose the steps of: providing a digital amplifier having output switching responsive to the digital asynchronous sample rate converter output audio data and further responsive to the output audio clocks at the new sample rate; and communicating the digital asynchronous sample rate converter output audio data and the output audio clocks at the new sample rate to the digital amplifier such that the digital amplifier operates to change its output switching pulse-frame rate from a first pulse-frame rate to new pulse-frame rate. The Midya reference teaches the steps of: providing a digital amplifier having output switching responsive to the digital asynchronous sample rate converter output audio data and further responsive to the output audio clocks at the new sample rate (see Figure 1 and page 1, col. 2, paragraphs [0010] – [0011]); and communicating the digital asynchronous sample rate converter output audio data and the output audio clocks at the new sample rate to the digital amplifier such that the digital amplifier operates to change its output switching pulse-frame rate from a first pulse-frame rate to new pulse-frame rate (see Figure 1 and page 1, col. 2, paragraphs [0010] – [0011]).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Schubert-Orndorff-Groshong to comprise the

steps of: providing a digital amplifier having output switching responsive to the digital asynchronous sample rate converter output audio data and further responsive to the output audio clocks at the new sample rate; and communicating the digital asynchronous sample rate converter output audio data and the output audio clocks at the new sample rate to the digital amplifier such that the digital amplifier operates to change its output switching pulse-frame rate from a first pulse-frame rate to new pulse-frame rate, as taught by Midya, in order to provide error correction in digital amplifiers.

As to claim 27, Schubert-Orndorff-Groshong discloses the method according to claim 25 with keep-out bands associated with the frequency group consisting of AM, FM, and TV band frequencies ((Orndorff: see Col. 1, lines 13-15, Col. 3, lines 23-30 and Col. 4, lines 37-42). However, it does not disclose the steps of: providing a digital amplifier having output switching responsive to the digital asynchronous sample rate converter output audio data and further responsive to the output audio clocks at the new sample rate; and communicating the digital asynchronous sample rate converter output audio data and the output audio clocks at the new sample rate to the digital amplifier such that the digital amplifier operates to change its output switching pulse-frame rate from a first pulse-frame rate to new pulse-frame rate that substantially minimizes interference minimizes interference with keep-out bands. The Midya reference teaches the steps of: providing a digital amplifier having output switching responsive to the digital asynchronous sample rate converter output audio data and further responsive to the output audio clocks at the new sample rate (see Figure 1 and page 1, col. 2, paragraphs [0010] – [0011]); and communicating the digital asynchronous sample rate converter output audio data and the output audio clocks at the new sample rate to the digital amplifier such that the digital

amplifier operates to change its output switching pulse-frame rate from a first pulse-frame rate to new pulse-frame rate that substantially minimizes interference minimizes interference with keep-out bands (see Figure 1 and page 1, col. 2, paragraphs [0010] – [0011]).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Schubert-Orndorff-Groshong to comprise the steps of: providing a digital amplifier having output switching responsive to the digital asynchronous sample rate converter output audio data and further responsive to the output audio clocks at the new sample rate; and communicating the digital asynchronous sample rate converter output audio data and the output audio clocks at the new sample rate to the digital amplifier such that the digital amplifier operates to change its output switching pulse-frame rate from a first pulse-frame rate to new pulse-frame rate that substantially minimizes interference minimizes interference with keep-out bands, as taught by Midya, in order to provide error correction in digital amplifiers.

Response to Arguments

5. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Bhattacharya whose telephone number is (571) 272-7917. The examiner can normally be reached on Weekdays, 9-6, with first Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on (571) 272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

sb

George Eng
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